

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claims 1-22 (Cancelled).

(Currently Amended) 23. A fill tube assembly comprising:

a tubular member comprising a first end for receiving molten metal, a second end having a tapered [flare] flange for engaging the casting mold, and an intermediate portion extending therebetween; and

a clamping assembly comprising an annular ring disposed over the fill tube and having a surface engaging the tapered flange of the second end of the tubular member, and a clamping plate fastened to the casting mold to induce a compressive force on the annular ring.

(Previously presented) 24. The fill tube assembly of Claim 23, wherein the intermediate portion has a generally uniform cross section.

(Previously presented) 25. The fill tube assembly of Claim 23, wherein the clamping assembly is structured to maintain a substantially leak-proof seal between the fill tube and the casting mold while accommodating dimensional variation.

(Previously presented) 26. The fill tube assembly of Claim 23, wherein the clamping assembly comprises an annular gasket disposed between the tapered flange of the second end of the tubular member and the casting mold.

(Previously presented) 27. The fill tube assembly of Claim 26, wherein the clamping plate having a structure to bias the annular ring against the tapered flange thereby distributing a uniform compressive load against the casting mold;

(Previously presented) 28. The fill tube assembly of Claim 25 further comprising a preload gap between the clamping plate and the casting mold, wherein the preload gap is sized to accommodate the dimension variation, wherein as the clamping plate is fastened to the casting mold the pre load gap is substantially eliminated.

(Previously presented) 29. The fill tube assembly of Claim 23 further comprising at least one fastener to fasten the clamping plate to the casting mold, wherein the casting mold further includes a plurality of fastener receiving apertures and a fill tube socket, wherein said second end of the tubular member is structured for insertion to said fill tube socket.

(Previously presented) 30. The fill tube assembly of Claim 23 further comprising:

the tapered flange comprising a mold engaging face and an exterior face, wherein the exterior face is tapered; and

the surface of the annular ring for engaging the tapered flange is tapered corresponding to the exterior face of the tapered flange.

(Previously presented) 31. The fill tube assembly of Claim 30 wherein the taper of the tapered flange is at an angle of about 15 degrees to about 85 degrees relative to the horizontal plane of the exterior face.

(Previously presented) 32. The fill tube assembly of Claim 23 wherein the clamping plate further comprises a threaded aperture and a threaded ring; wherein the threaded ring is tightened against the annular load ring to establish a compressive load between said load ring and the tapered flange of the second end of the tubular member.

(Previously presented) 33. A casting apparatus comprising:

a casting mold including a fill tube socket and a plurality of fastener receiving apertures;

a fill tube having a receiving end, a mold-engaging end and an intermediate portion extending therebetween, the mold-engaging end having a tapered flange radially extending therefrom, the remainder of the fill tube having a generally uniform cross-section; and

a clamping assembly comprising:

an annular gasket disposed within the fill tube socket between the tapered flange of the fill tube and the casting mold;

an annular load ring disposed over the fill tube and having a taper corresponding to the tapered flange of the mold engaging end of the fill tube;

a clamping plate disposed over the annular load ring, the clamping plate including a plurality of fastener-receiving openings corresponding to the fastener-receiving apertures in the casting mold.

(Previously presented) 34. The casting apparatus of claim 33 wherein the clamping plate

is structured to be initially spaced apart from the casting mold, in order to form a pre-load gap therebetween wherein the pre-load gap is structured to narrow when the plurality of fasteners are tightened.

(Previously presented) 35. The casting apparatus of claim 33 further comprising: a threaded aperture in the clamping plate; and a threaded ring corresponding to the threaded aperture in the clamping plate structured to be rotated to tighten against the annular load ring in order to produce a compressive load between the annular load ring and the tapered flange.

(Previously presented) 36. The casting apparatus of claim 33 wherein said fill tube flange includes a mold-engaging face and a non-engaging face; wherein the non-engaging face of said flange is tapered; wherein said annular load ring includes a flange-engaging face and a non-engaging face; and wherein said flange-engaging face is tapered to correspond with the tapered non-engaging face of said flange.

(Previously presented) 37. The casting apparatus of claim 33 wherein the tapers of the non-engaging face of the fill tube and the flange-engaging face of the annular load ring are the same.

(Previously presented) 38. The casting apparatus of claim 33 wherein the tapered flange-engaging face of the load ring is structured to self-center on the tapered non-engaging face of the flange, thereby distributing a uniform compression load on the flange when the clamping plate is tightened.